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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,193	12/20/2001	Frank S. Geefay	10010872-1	5393

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EXAMINER

DANG, TRUNG Q

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/029,193

Applicant(s)

GEEFAY ET AL.

Examiner

Trung Q. Dang

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

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1. Restriction to one of the following inventions is required under 35 U.S.C. § 121:

I. Claims 1-11 drawn to a process for making a sloped via contact structure ,  
classified in class 438, subclass 667.

II. Claims 12-22 drawn to a sloped via contact structure, classified in Class 774,  
subclass 497.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (M.P.E.P. § 806.05(f)). In the instant case, unpatentability of the group I invention would not necessarily imply unpatentability of the group II invention, since the device structure of the group II invention could be made by processes materially different than that of the group I invention, for example, the front contact could be formed after coating the via walls with conductive material.

Because these inventions are distinct for the reasons given above and, as shown by the above different classifications, the fields of search are not co-extensive and separate examination would be required, restriction for examination purposes as indicated is proper.

2. Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed.

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3. During a telephone conversation with Mr. Wu on 12/06/02 a provisional election was made without traverse to prosecute the invention of the Group II invention, claims 12-22.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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Claims 12-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanaoka et al. (US 2002/0030245).

Note that the middle portion of via 4 reads on the claimed limitation “the via increases in width” because the middle portion increases in width with respect to the end portion.

As for claims 13-14, see paragraph [0148] for the diameter of the widest portion of via 4.

As for claim 15, see paragraph [0171] for the thickness of the metal coating layer 8.

As for claims 21- 22, via 4 is considered to be curved since the slope of the via wall is not constant.

As for claims 18-20, note that the claims are directed to a product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (foot note 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that applicant has the burden of proof in such cases as the above case law makes clear. Also see MPEP 2113.

6. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Youmans (U.S. Pat. 3,761,782).

The reference teaches every feature of the claimed structure in which it discloses a sloped via contact structure comprising: a contact 38 on the front side of a wafer; a contact 58 on the

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back side of the wafer; a via 21 through the wafer connecting the front contact 38 to the back contact 58, the via walls have a metal coating layer 41, and the via increases in width (see Fig. 11).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is (703) 308-2548. The examiner can normally be reached on weekdays from 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794. The fax phone number for this Group is (703) 305-3432 or (703) 308-7725.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'Trung Dang', with a stylized, cursive script.

Trung Dang

Primary Examiner, Group 2800